WHAT IS CLAIMED IS:

1. A chip comprising a plurality of sensors.

2. A chip of claim 1 comprising a plurality of sensors, each of which contains one or more light sources and one or more optical detectors.

3. A chip of claim 2 in which the light source is an electro-luminescent material.

4. A chip of claim 2 in which the light source is an organic electroluminescent material.

5. A chip of claim 2 in which the light source is an inorganic electroluminescent material.

6. A chip of claim 2 in which the light source is connected by conductive electrodes.

7. A chip of claim 2 in which the detector is a semiconducting material.

8. A chip of claim 2 in which the detector is composed of amorphous silicon.

9. A chip of claim 2 in which the detector is tuned to respond to a specific wavelength range of light.

10. A chip of claim 2 with multiple detectors in which each detector is tuned to a different wavelength range of light.

11. A chip of claim 2 with multiple detectors in which each detector is tuned to a different wavelength range of light and the output of these detectors produces a spectra.

12. A chip of claim 2 with multiple detectors in which each

detector is tuned to a different wavelength range of light and each detector is connected by conductive electrodes.

13. A chip of claim 2 in which each sensor is coupled to a bioactive material.

14. A chip of claim 2 in which each sensor is coupled to a protein.

15. A chip of claim 2 in which each sensor is coupled to an antibody.

16. A chip of claim 2 in which each sensor is coupled to a fluorescence-labeled antibody.

17. A chip of claim 2 in which each sensor is coupled to an organic dye.

18. A chip of claim 2 in which each sensor is coupled to a porous gel.

19. A chip of claim 2 in which each sensor is coupled to a porous gel doped with an organic dye.

20. A chip of claim 2 in which each sensor is coupled to a porous gel doped with a protein or enzyme.

21. A chip of claim 2 in which each sensor is coupled to a porous gel containing an antibody.

22. A chip of claim 2 in which each sensor is coupled to a porous gel encapsulating a living cell.

23. A chip of claim 2 in which each sensor is coupled to a porous silica gel.

24. A chip of claim 2 in which each sensor is coupled to a

porous silica gel doped with an organic dye.

25. A chip of claim 2 in which each sensor is coupled to a porous silica gel doped with a protein or enzyme.

26. A chip of claim 2 in which each sensor is coupled to a porous silica gel containing an antibody.

27. A chip of claim 2 in which each sensor is coupled to a porous silica gel encapsulating a living cell.

28. A chip of claim 2 in which each sensor is coupled to a porous silica gel microsphere.

29. A chip of claim 2 in which each sensor is coupled to a porous silica gel microsphere doped with an organic dye.

30. A chip of claim 2 in which each sensor is coupled to a porous silica gel microsphere doped with a protein or

enzyme.

31. A chip of claim 2 in which each sensor is coupled to a porous silica gel microsphere containing an antibody.

32. A chip of claim 2 in which each sensor is coupled to a porous silica gel microsphere encapsulating a living cell.